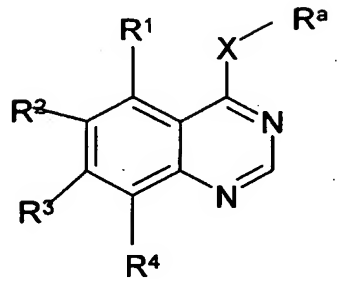
Claims

1. The use of a compound of formula (I)

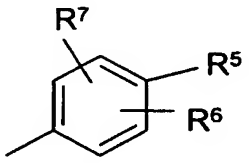


(I)

or a salt, ester, amide or prodrug thereof;

where X is O, or S, S(O) or $S(O)_2$, NH or NR^8 where R^8 is hydrogen or C_{1-6}alkyl;

R^a is a 3-quinoline group or a group of sub-formula (i)



(i)

where R^5 is either a group $-Z-(CH_2)_n-R^9$, halogen, a group of formula $NR^{10}R^{10'}$, an optionally subsitituted hydrocarbyl group (other than ethenyl substituted by a carboxy group or an amide or sulphonamide derivative thereof), an optionally substituted heterocyclyl group or an optionally substituted alkoxy group; where Z is O or S, n is 0, or an integer of from 1 to 6, R^9 is hydrogen or optionally substituted hydrocarbyl or optionally substituted heterocyclyl; R^{10} and $R^{10'}$ are independently selected from hydrogen, optionally substituted hydrocarbyl or optionally substituted heterocyclyl, or R^{10} and $R^{10'}$ together with the nitrogen atom to which they are attached form an optionally substituted heterocyclic ring which may optionally contain further heteroatoms, or an azo group of formula $-N=N-R^{11}$ where R^{11} is an optionally substituted hydrocarbyl group or optionally substituted heterocycyl group;

R^6 and R^7 are independently selected from hydrogen, halo,C_{1-4}alkyl, C_{1-4} alkoxy, C_{1-4}alkoxymethyl, di(C_{1-4}alkoxy)methyl, C_{1-4}alkanoyl, trifluoromethyl, cyano, amino, C_{2-5}alkenyl, C_{2-5}alkynyl, a phenyl group, a benzyl group or a 5-6-membered heterocyclic group with 1-3 heteroatoms, selected independently from O, S and N, which heterocyclic group may be aromatic or non-aromatic and may be saturated (linked via a ring carbon or nitrogen atom) or unsaturated (linked via a ring carbon atom), and which phenyl, benzyl or heterocyclic group may bear on one or more ring carbon atoms up to 5 substituents selected from hydroxy, halogeno, C_{1-3}alkyl, C_{1-3}alkoxy, C_{1-3}alkanoyloxy, trifluoromethyl, cyano, amino, nitro, C_{2-4}alkanoyl, C_{1-4}alkanoylamino, C_{1-4}alkoxycarbonyl, C_{1-4}alkylsulphanyl, C_{1-4}alkylsulphinyl, C_{1-4}alkylsulphonyl, carbamoyl, N-C_{1-4}alkylcarbamoyl, N,N-di(C_{1-4}alkyl)carbamoyl, aminosulphonyl, N-C_{1-4}alkylaminosulphonyl, N,N-di(C_{1-4}alkyl)aminosulphonyl, C_{1-4}alkylsulphonylamino, and a saturated heterocyclic group selected from morpholino, thiomorpholino, pyrrolidinyl, piperazinyl, piperidinyl imidazolidinyl and pyrazolidinyl, which saturated heterocyclic group may bear 1 or 2 substituents selected from oxo, hydroxy, halogeno, C_{1-3}alkyl, C_{1-3}alkoxy, C_{1-3}alkanoyloxy, trifluoromethyl, cyano, amino, nitro and C_{1-4}alkoxycarbonyl, and

R^1, R^2, R^3, R^4 are independently selected from halogeno, cyano, nitro, C_{1-3}alkylsulphanyl, $-N(OH)R^{12}$ (wherein R^{12} is hydrogen, or C_{1-3}alkyl), or $R^{14}X^1$- (wherein X^1 represents a direct bond, -O-, $-CH_2-$, -OC(O)-, -C(O)-, -S-, -SO-, $-SO_2-$, $-NR^{15}C(O)-$, $-C(O)NR^{16}-$, $-SO_2NR^{17}-$, $-NR^{18}SO_2-$ or $-NR^{19}-$ (wherein R^{15}, R^{16}, R^{17}, R^{18} and R^{19} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl), and R^{14} is hydrogen, optionally substituted hydrocarbyl, optionally substituted heterocyclyl or optionally substituted alkoxy; in the preparation of a medicament for use in the inhibtion of aurora 2 kinase.

2. The use according to claim 1 wherein in the compound of formula (I), at least one group R^1, R^2, R^3, R^4 is a group $R^{14}X^1$- and R^{14} is hydrogen, an optionally substituted hydrocarbyl group selected from alkyl, alkenyl, alkynyl, aryl, aralkyl, cycloalkyl, cycloalkenyl or cycloalkynyl, or combinations thereof; or an

optionally substituted heterocyclyl group of from 4 to 20 ring atoms, at least one of which is a heteroatom such as oxygen, sulphur or nitrogen and where the optional substituents comprise at least one functional group selected from nitro, cyano, halo, oxo, $=CR^{78}R^{79}$, $C(O)_xR^{77}$, OR^{77}, $S(O)_yR^{77}$, $NR^{78}R^{79}$, $C(O)NR^{78}R^{79}$, $OC(O)NR^{78}R^{79}$, $=NOR^{77}$, $-NR^{77}C(O)_xR^{78}$, $-NR^{77}CONR^{78}R^{79}$, $-N=CR^{78}R^{79}$, $S(O)_yNR^{78}R^{79}$ or $-NR^{77}S(O)_yR^{78}$ where R^{77}, R^{78} and R^{79} are independently selected from hydrogen, optionally substituted hydrocarbyl, optionally substituted hetercyclyl or optionally substituted alkoxy, or R^{78} and R^{79} together form an optionally substituted ring which optionally contains further heteroatoms such as oxygen, nitrogen, S, S(O) or $S(O)_2$, where x is an integer of 1 or 2, y is 0 or an integer of 1-3.

3. The use according to claim 2 where hydrocarbyl, heterocyclyl or alkoxy groups R^{77}, R^{78} and R^{79} as well as rings formed by R^{78} and R^{79} are optionally substituted by halo, perhaloalkyl, mercapto, alkylthio, hydroxy, carboxy, alkoxy, heteroaryl, heteroaryloxy, cycloalkyl, cycloalkenyl, cycloalkynyl, alkenyloxy, alkynyloxy, alkoxyalkoxy, aryloxy (where the aryl group may be substituted by halo, nitro, or hydroxy), cyano, nitro, amino, mono- or di-alkyl amino, oximino or $S(O)_yR^{90}$ where y is as defined above and R^{90} is an alkyl.

4. The use according to any one of the preceding claims where in the compound of formula (I) at least one of R^1, R^2, R^3 and R^4 is a group $R^{14}X^1$- where X^1 is as defined in relation to formula (I) and R^{14} is selected from one of the following twenty-two groups:

1) hydrogen or C_{1-5}alkyl which may be unsubstituted or which may be substituted with one or more functional groups;

2) $-R^aX^2C(O)R^{20}$ (wherein X^2 represents -O- or $-NR^{21}$- (in which R^{21} represents hydrogen, or alkyl optionally substituted with a functional group) and R^{20} represents C_{1-3}alkyl, $-NR^{22}R^{23}$ or $-OR^{24}$ (wherein R^{22}, R^{23} and R^{24} which may be the same or different each represents hydrogen, or alkyl optionally substituted with a functional group);

3) $-R^bX^3R^{25}$ (wherein X^3 represents -O-, -C(O)-, -S-, -SO-, $-SO_2-$, -OC(O)-, $-NR^{26}C(O)-$, $-NR^{26}C(O)O-$, $-C(O)NR^{27}-$, $-C(O)ONR^{27}-$, $-SO_2NR^{28}-$, $-NR^{29}SO_2-$ or $-NR^{30}-$ (wherein R^{26}, R^{27}, R^{28}, R^{29} and R^{30} each independently represents hydrogen, or alkyl optionally substituted with a functional group) and R^{25} represents hydrogen, hydrocarbyl (as defined herein) or a saturated heterocyclic group, wherein the hydrocarbyl or heterocyclic groups may be optionally substituted by one or more functional groups and the heterocyclic groups may additionally be substituted by a hydrocarbyl group;

4) $-R^cX^4R^{c'}X^5R^{31}$ (wherein X^4 and X^5 which may be the same or different are each -O-, -C(O)-, -S-, -SO-, $-SO_2-$, -OC(O)-, $-NR^{32}C(O)-$, $-NR^{32}C(O)O-$, $-C(O)NR^{33}-$, $-C(O)ONR^{33}-$, $-SO_2NR^{34}-$, $-NR^{35}SO_2-$ or $-NR^{36}-$ (wherein R^{32}, R^{33}, R^{34}, R^{35} and R^{36} each independently represents hydrogen or alkyl optionally substituted by a functional group) and R^{31} represents hydrogen, or alkyl optionally substituted by a functional group;

5) R^{37} wherein R^{37} is a C_{3-6} cycloalkyl or saturated heterocyclic ring (linked via carbon or nitrogen), which cycloalkyl or heterocyclic group may be substituted by one or more functional groups or by a hydrocarbyl or heterocyclyl group which hydrocarbyl or heterocyclyl group may be optionally substituted by one or more functional groups;

6) $-R^dR^{37}$ (wherein R^{37} is as defined hereinbefore);

7) $-R^eR^{37}$ (wherein R^{37} is as defined hereinbefore);

8) $-R^fR^{37}$ (wherein R^{37} is as defined hereinbefore);

9) R^{38} (wherein R^{38} represents a pyridone group, an aryl group or an aromatic heterocyclic group (linked via carbon or nitrogen) with 1-3 heteroatoms selected from O, N and S, which pyridone, aryl or aromatic heterocyclic group may be substituted by one or more functional groups or by a hydrocarbyl group optionally substituted by one or more functional groups or heterocyclyl groups, or by a heterocyclyl group optionally susbsituted by one or more functional groups or hydrocarbyl groups;

10) $-R^gR^{38}$ (wherein R^{38} is as defined hereinbefore);

11) $-R^hR^{38}$ (wherein R^{38} is as defined hereinbefore);

12) $-R^iR^{38}$ (wherein R^{38} is as defined hereinbefore);

13) -R^j X^6R^{38} (wherein X^6 represents -O-, -S-, -SO-, -SO_2-, -OC(O)-, -NR^{43}C(O)-, -NR^{43}C(O)O-, -C(O)NR^{44}-, -C(O)ONR^{44}-, -SO_2NR^{45}-, -$NR^{46}SO_2$- or -NR^{47}- (wherein R^{43}, R^{44}, R^{45}, R^{46} and R^{47} each independently represents hydrogen, or alkyl optionally substituted with a functional group) and R^{38} is as defined hereinbefore);

14) -$R^kX^7R^{38}$ (wherein X^7 represents -O-, -C(O)-, -S-, -SO-, -SO_2-, -OC(O)-, -NR^{48}C(O)-, NR^{48}C(O)O-, -C(O)NR^{49}-, -C(O)ONR^{49}-, -SO_2NR^{50}-, -$NR^{51}SO_2$- or -NR^{52}- (wherein R^{48}, R^{49}, R^{50}, R^{51} and R^{52} each independently represents hydrogen, or alkyl optionally substituted with a functional group) and R^{38} is as defined hereinbefore);

15) -$R^mX^8R^{38}$ (wherein X^8 represents -O-, -C(O)-, -S-, -SO-, -SO_2-, -OC(O)-, -NR^{53}C(O)-, -NR^{53}C(O)O-, -C(O)NR^{54}-, -C(O)ONR^{54}-, -SO_2NR^{55}-, -$NR^{56}SO_2$- or -NR^{57}- (wherein R^{53}, R^{54}, R^{55}, R^{56} and R^{57} each independently represents hydrogen, hydrogen, or alkyl optionally substituted with a functional group) and R^{38} is as defined hereinbefore);

16) -R^n $X^9R^{n'}R^{38}$ (wherein X^9 represents -O-, -C(O)-, -S-, -SO-, -SO_2-, -OC(O)-, -NR^{58}C(O)-, -NR^{58}C(O)O-, -C(O)NR^{59}-, -C(O)ONR^{59}-, -SO_2NR^{60}-, -$NR^{61}SO_2$- or -NR^{62}- (wherein R^{58}, R^{59}, R^{60}, R^{61} and R^{62} each independently represents hydrogen, hydrogen, or alkyl optionally substituted with a functional group) and R^{38} is as defined hereinbefore);

17) -R^p X^9-$R^{p'}R^{37}$ (wherein X^9 and R^{37} are as defined hereinbefore);

18) C_{2-5}alkenyl which may be unsubstituted or which may be substituted with one or more functional groups;

19) C_{2-5}alkynyl which may be unsubstituted or which may be substituted with one or more functional groups;

20) -$R^tX^9R^{t'}R^{37}$ (wherein X^9 and R^{37} are as defined hereinbefore);

21) -R^u X^9 $R^{u'}R^{37}$ (wherein X^9 and R^{37} are as defined hereinbefore); and

22) - R^v $R^{63}(R^{v'})_q(X^9)_rR^{64}$(wherein X^9 is as defined hereinbefore, q is 0 or 1, r is 0 or 1, and R^{63} is a C_{1-3}alkylene group or a cyclic group selected from divalent cycloalkyl or heterocyclic group, which C_{1-3}alkylene group may be substituted by one or more functional groups and which cyclic group may be substituted by one or more functional groups or by a hydrocarbyl group optionally substituted by

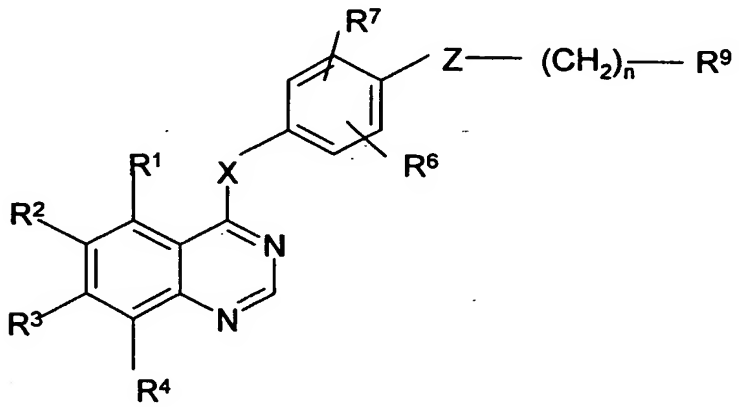
one or more functional groups or heterocyclyl groups, or by a heterocyclyl group optionally subsituted by one or more functional groups or hydrocarbyl groups; and R^{64} is hydrogen, C_{1-3}alkyl, or a cyclic group selected from cycloalkyl or heterocyclic group, which C_{1-3}alkyl group may be substituted by one or more functional groups and which cyclic group may be substituted by one or more may be substituted by one or more functional groups or by a hydrocarbyl group optionally substituted by one or more functional groups or heterocyclyl groups, or by a heterocyclyl group optionally substituted by one or more functional groups or hydrocarbyl groups;

and wherein R^a, R^b, , R^c, $R^{c'}$, R^d, R^g, R^j, R^n, $R^{n'}$ R^p, R^{p1}, $R^{t'}$, $R^{u'}$, R^v and $R^{v'}$ are independently selected from C_{1-8}alkylene groups optionally substitued by one or more functional groups,

R^e R^h, R^k and R^t are independently selected from C_{2-8}alkenylene groups optionally substituted by one or more functional groups, and

R^f, R^i, R^m and R^u are independently selected from C_{2-8}alkynylene groups optionally substituted by one or more functional groups.

5. The use according to any one of the preceding claims wherein the compound of formula (I) is a compound of formula (II)



(II)

or a salt, ester, amide or prodrug thereof;

where X, Z, n, R^9, R^6, R^7, R^1, R^2, R^3 and R^4 are as defined in claim 1.

6. The use according to claim 5 wherein the compound of formula (II) is compound of formula (IIA) which has the structure (II) as shown in claim 5, or a salt, ester or amide thereof; and

where X is O, or S, S(O) or $S(O)_2$, or NR^8 where R^8 is hydrogen or C_{1-6}alkyl;

Z is O or S,

n is 0, or an integer of from 1 to 6

R^9 is hydrogen or optionally substituted hydrocarbyl or optionally substituted heterocyclyl;

and R^6 and R^7 are independently selected from hydrogen, halo,C_{1-4}alkyl, C_{1-4} alkoxy, C_{1-4}alkoxymethyl, di(C_{1-4}alkoxy)methyl, C_{1-4}alkanoyl, trifluoromethyl, cyano, amino, C_{2-5}alkenyl, C_{2-5}alkynyl, a phenyl group, a benzyl group or a 5-6-membered heterocyclic group with 1-3 heteroatoms, selected independently from O, S and N, which heterocyclic group may be aromatic or non-aromatic and may be saturated (linked via a ring carbon or nitrogen atom) or unsaturated (linked via a ring carbon atom), and which phenyl, benzyl or heterocyclic group may bear on one or more ring carbon atoms up to 5 substituents selected from hydroxy, halogeno, C_{1-3}alkyl, C_{1-3}alkoxy, C_{1-3}alkanoyloxy, trifluoromethyl, cyano, amino, nitro, C_{2-4}alkanoyl, C_{1-4}alkanoylamino, C_{1-4}alkoxycarbonyl, C_{1-4}alkylsulphanyl, C_{1-4}alkylsulphinyl, C_{1-4}alkylsulphonyl, carbamoyl, N-C_{1-4}alkylcarbamoyl, N,N-di(C_{1-4}alkyl)carbamoyl, aminosulphonyl, N-C_{1-4}alkylaminosulphonyl, N,N-di(C_{1-4}alkyl)aminosulphonyl, C_{1-4}alkylsulphonylamino, and a saturated heterocyclic group selected from morpholino, thiomorpholino, pyrrolidinyl, piperazinyl, piperidinyl imidazolidinyl and pyrazolidinyl, which saturated heterocyclic group may bear 1 or 2 substituents selected from oxo, hydroxy, halogeno, C_{1-3}alkyl, C_{1-3}alkoxy, C_{1-3}alkanoyloxy, trifluoromethyl, cyano, amino, nitro and C_{1-4}alkoxycarbonyl, and

R^1, R^2, R^3, R^4 are independently selected from, halo, cyano, nitro, trifluoromethyl, C_{1-3}alkyl, $-NR^{12}R^{13}$ (wherein R^{12} and R^{13}, which may be the same or different, each represents hydrogen or C_{1-3}alkyl), or $-X^1R^{14}$ (wherein X^1 represents a direct bond, -O-, $-CH_2-$, -OCO-, carbonyl, -S-, -SO-, $-SO_2-$, $-NR^{15}CO-$, $-CONR^{16}-$, $-SO_2NR^{17}-$, $-NR^{18}SO_2-$ or $-NR^{19}-$ (wherein R^{15}, R^{16}, R^{17},

R^{18} and R^{19} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl), and R^{14} is selected from one of the following groups:

1') hydrogen or C_{1-5}alkyl which may be unsubstituted or which may be substituted with one or more groups selected from hydroxy, fluoro or amino,

2') C_{1-5}alkylX^2COR^{20} (wherein X^2 represents -O- or -NR^{21}- (in which R^{20} represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{21} represents C_{1-3}alkyl, -$NR^{22}R^{23}$ or -OR^{24} (wherein R^{22}, R^{23} and R^{24} which may be the same or different each represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl);

3') C_{1-5}alkylX^3R^{25} (wherein X^3 represents -O-, -S-, -SO-, -SO_2-, -OCO-, -NR^{26}CO-, -CONR^{27}-, -SO_2NR^{28}-, -$NR^{29}SO_2$- or -NR^{30}- (wherein R^{26}, R^{27}, R^{28}, R^{29} and R^{30} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{25} represents hydrogen, C_{1-3}alkyl, cyclopentyl, cyclohexyl or a 5-6-membered saturated heterocyclic group with 1-2 heteroatoms, selected independently from O, S and N, which C_{1-3}alkyl group may bear 1 or 2 substituents selected from oxo, hydroxy, halogeno and C_{1-4}alkoxy and which cyclic group may bear 1 or 2 substituents selected from oxo, hydroxy, halogeno, C_{1-4}alkyl, C_{1-4}hydroxyalkyl and C_{1-4}alkoxy);

4') C_{1-5}alkylX^4C_{1-5}alkylX^5R^{31} (wherein X^4 and X^5 which may be the same or different are each -O-, -S-, -SO-, -SO_2-, -NR^{32}CO-, -CONR^{33}-, -SO_2NR^{34}-, -$NR^{35}SO_2$- or -NR^{36}- (wherein R^{32}, R^{33}, R^{34}, R^{35} and R^{36} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{31} represents hydrogen or C_{1-3}alkyl);

5') R^{37} (wherein R^{37} is a 5-6-membered saturated heterocyclic group (linked via carbon or nitrogen) with 1-2 heteroatoms, selected independently from O, S and N, which heterocyclic group may bear 1 or 2 substituents selected from oxo, hydroxy, halogeno, C_{1-4}alkyl, C_{1-4}hydroxyalkyl, C_{1-4}alkoxy, C_{1-4}alkoxyC_{1-4}alkyl and C_{1-4}alkylsulphonylC_{1-4}alkyl);

6') C_{1-5}alkylR^{37} (wherein R^{37} is as defined hereinbefore in (5'));

7') C_{2-5}alkenylR^{37} (wherein R^{37} is as defined hereinbefore in (5'));

8') C_{2-5}alkynylR^{37} (wherein R^{37} is as defined hereinbefore in (5'));

9') R^{38} (wherein R^{38} represents a pyridone group, a phenyl group or a 5-6-membered aromatic heterocyclic group (linked via carbon or nitrogen) with

1-3 heteroatoms selected from O, N and S, which pyridone, phenyl or aromatic heterocyclic group may carry up to 5 substituents on an available carbon atom selected from hydroxy, halogeno, amino, C_{1-4}alkyl, C_{1-4}alkoxy, C_{1-4}hydroxyalkyl, C_{1-4}aminoalkyl, C_{1-4}alkylamino, C_{1-4}hydroxyalkoxy, carboxy, trifluoromethyl, cyano, $-CONR^{39}R^{40}$ and $-NR^{41}COR^{42}$ (wherein R^{39}, R^{40}, R^{41} and R^{42}, which may be the same or different, each represents hydrogen, C_{1-4}alkyl or C_{1-3}alkoxyC_{2-3}alkyl));

10') C_{1-5}alkylR^{38} (wherein R^{38} is as defined hereinbefore in (9'));

11') C_{2-5}alkenylR^{38} (wherein R^{38} is as defined hereinbefore in (9'));

12') C_{2-5}alkynylR^{38} (wherein R^{38} is as defined hereinbefore in (9'));

13') C_{1-5}alkylX^6R^{38} (wherein X^6 represents -O-, -S-, -SO-, $-SO_2-$, $-NR^{43}CO-$, $-CONR^{44}-$, $-SO_2NR^{45}-$, $-NR^{46}SO_2-$ or $-NR^{47}-$ (wherein R^{43}, R^{44}, R^{45}, R^{46} and R^{47} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{38} is as defined hereinbefore in (9'));

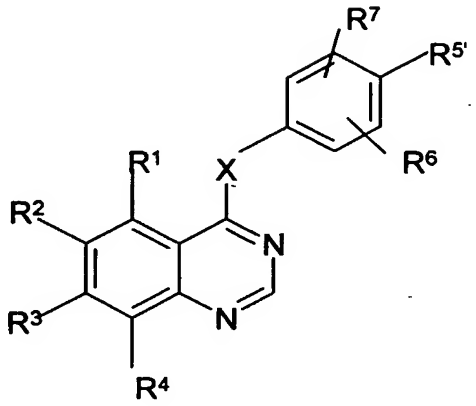
14') C_{2-5}alkenylX^7R^{38} (wherein X^7 represents -O-, -S-, -SO-, $-SO_2-$, $-NR^{48}CO-$, $-CONR^{49}-$, $-SO_2NR^{50}-$, $-NR^{51}SO_2-$ or $-NR^{52}-$ (wherein R^{48}, R^{49}, R^{50}, R^{51} and R^{52} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{38} is as defined hereinbefore in (9'));

15') C_{2-5}alkynylX^8R^{38} (wherein X^8 represents -O-, -S-, -SO-, $-SO_2-$, $-NR^{53}CO-$, $-CONR^{54}-$, $-SO_2NR^{55}-$, $-NR^{56}SO_2-$ or $-NR^{57}-$ (wherein R^{53}, R^{54}, R^{55}, R^{56} and R^{57} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{38} is as defined hereinbefore in (9'));

16') C_{1-3}alkylX^9C_{1-3}alkylR^{38} (wherein X^9 represents -O-, -S-, -SO-, $-SO_2-$, $-NR^{58}CO-$, $-CONR^{59}-$, $-SO_2NR^{60}-$, $-NR^{61}SO_2-$ or $-NR^{62}-$ (wherein R^{58}, R^{59}, R^{60}, R^{61} and R^{62} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{38} is as defined hereinbefore in (9')); and

17') C_{1-3}alkylX^9C_{1-3}alkylR^{37} (wherein X^9 and R^{37} are as defined hereinbefore (in 5').

7. The use according to any one of claims 1 to 5 wherein the compound of formula (I) is a compound of formula (III)



(III)

or a salt, ester, amide or prodrug thereof;

where X, R^1, R^2, R^3, R^4, R^6 and R^7 are as defined in claim 1 and $R^{5'}$ is an optionally subsitituted hydrocarbyl, optionally substituted heterocyclyl or optionally substituted alkoxy group, provided that $R^{5'}$ is other than ethenyl substituted by a carboxy group or an amide or sulphonamide derivative thereof.

8. The use according to claim 7 wherein the compound of formula (III) is a compound of formula (IIIA) which is of structure (III) as shown above, or a salt, ester or amide thereof; and

where X is O, or S, S(O) or $S(O)_2$, or NR^8 where R^8 is hydrogen or C_{1-6}alkyl;

$R^{5'}$ is hydrogen or optionally substituted hydrocarbyl or optionally substituted heterocyclyl;

and R^6 and R^7 are independently selected from hydrogen, halo,C_{1-4}alkyl, C_{1-4} alkoxy, C_{1-4}alkoxymethyl, di(C_{1-4}alkoxy)methyl, C_{1-4}alkanoyl, trifluoromethyl, cyano, amino, C_{2-5}alkenyl, C_{2-5}alkynyl, a phenyl group, a benzyl group or a 5-6-membered heterocyclic group with 1-3 heteroatoms, selected independently from O, S and N, which heterocyclic group may be aromatic or non-aromatic and may be saturated (linked via a ring carbon or nitrogen atom) or unsaturated (linked via a ring carbon atom), and which phenyl, benzyl or heterocyclic group may bear on one or more ring carbon atoms up to 5 substituents selected from hydroxy, halogeno, C_{1-3}alkyl, C_{1-3}alkoxy, C_{1-3}alkanoyloxy, trifluoromethyl,

cyano, amino, nitro, C_{2-4}alkanoyl, C_{1-4}alkanoylamino, C_{1-4}alkoxycarbonyl, C_{1-4}alkylsulphanyl, C_{1-4}alkylsulphinyl, C_{1-4}alkylsulphonyl, carbamoyl, N-C_{1-4}alkylcarbamoyl, N,N-di(C_{1-4}alkyl)carbamoyl, aminosulphonyl, N-C_{1-4}alkylaminosulphonyl, N,N-di(C_{1-4}alkyl)aminosulphonyl, C_{1-4}alkylsulphonylamino, and a saturated heterocyclic group selected from morpholino, thiomorpholino, pyrrolidinyl, piperazinyl, piperidinyl imidazolidinyl and pyrazolidinyl, which saturated heterocyclic group may bear 1 or 2 substituents selected from oxo, hydroxy, halogeno, C_{1-3}alkyl, C_{1-3}alkoxy, C_{1-3}alkanoyloxy, trifluoromethyl, cyano, amino, nitro and C_{1-4}alkoxycarbonyl, and

R^1, R^2, R^3, R^4 are independently selected from, halo, cyano, nitro, trifluoromethyl, C_{1-3}alkyl, $-NR^{12}R^{13}$ (wherein R^{12} and R^{13}, which may be the same or different, each represents hydrogen or C_{1-3}alkyl), or $-X^1R^{14}$ (wherein X^1 represents a direct bond, -O-, $-CH_2-$, -OCO-, carbonyl, -S-, -SO-, $-SO_2-$, $-NR^{15}CO-$, $-CONR^{16}-$, $-SO_2NR^{17}-$, $-NR^{18}SO_2-$ or $-NR^{19}-$ (wherein R^{15}, R^{16}, R^{17}, R^{18} and R^{19} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl), and R^{14} is selected from one of the following groups:

1') hydrogen or C_{1-5}alkyl which may be unsubstituted or which may be substituted with one or more groups selected from hydroxy, fluoro or amino,

2') C_{1-5}alkylX^2COR^{20} (wherein X^2 represents -O- or $-NR^{21}-$ (in which R^{20} represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{21} represents C_{1-3}alkyl, $-NR^{22}R^{23}$ or $-OR^{24}$ (wherein R^{22}, R^{23} and R^{24} which may be the same or different each represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl);

3') C_{1-5}alkylX^3R^{25} (wherein X^3 represents -O-, -S-, -SO-, $-SO_2-$, -OCO-, $-NR^{26}CO-$, $-CONR^{27}-$, $-SO_2NR^{28}-$, $-NR^{29}SO_2-$ or $-NR^{30}-$ (wherein R^{26}, R^{27}, R^{28}, R^{29} and R^{30} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{25} represents hydrogen, C_{1-3}alkyl, cyclopentyl, cyclohexyl or a 5-6-membered saturated heterocyclic group with 1-2 heteroatoms, selected independently from O, S and N, which C_{1-3}alkyl group may bear 1 or 2 substituents selected from oxo, hydroxy, halogeno and C_{1-4}alkoxy and which cyclic group may bear 1 or 2 substituents selected from oxo, hydroxy, halogeno, C_{1-4}alkyl, C_{1-4}hydroxyalkyl and C_{1-4}alkoxy);

4') C_{1-5}alkylX^4C_{1-5}alkylX^5R^{31} (wherein X^4 and X^5 which may be the same or different are each -O-, -S-, -SO-, $-SO_2-$, $-NR^{32}CO-$, $-CONR^{33}-$, $-SO_2NR^{34}-$, $-NR^{35}SO_2-$ or $-NR^{36}-$ (wherein R^{32}, R^{33}, R^{34}, R^{35} and R^{36} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{31} represents hydrogen or C_{1-3}alkyl);

5') R^{37} (wherein R^{37} is a 5-6-membered saturated heterocyclic group (linked via carbon or nitrogen) with 1-2 heteroatoms, selected independently from O, S and N, which heterocyclic group may bear 1 or 2 substituents selected from oxo, hydroxy, halogeno, C_{1-4}alkyl, C_{1-4}hydroxyalkyl, C_{1-4}alkoxy, C_{1-4}alkoxyC_{1-4}alkyl and C_{1-4}alkylsulphonylC_{1-4}alkyl);

6') C_{1-5}alkylR^{37} (wherein R^{37} is as defined hereinbefore in (5'));

7') C_{2-5}alkenylR^{37} (wherein R^{37} is as defined hereinbefore in (5'));

8') C_{2-5}alkynylR^{37} (wherein R^{37} is as defined hereinbefore in (5'));

9') R^{38} (wherein R^{38} represents a pyridone group, a phenyl group or a 5-6-membered aromatic heterocyclic group (linked via carbon or nitrogen) with 1-3 heteroatoms selected from O, N and S, which pyridone, phenyl or aromatic heterocyclic group may carry up to 5 substituents on an available carbon atom selected from hydroxy, halogeno, amino, C_{1-4}alkyl, C_{1-4}alkoxy, C_{1-4}hydroxyalkyl, C_{1-4}aminoalkyl, C_{1-4}alkylamino, C_{1-4}hydroxyalkoxy, carboxy, trifluoromethyl, cyano, $-CONR^{39}R^{40}$ and $-NR^{41}COR^{42}$ (wherein R^{39}, R^{40}, R^{41} and R^{42}, which may be the same or different, each represents hydrogen, C_{1-4}alkyl or C_{1-3}alkoxyC_{2-3}alkyl);

10') C_{1-5}alkylR^{38} (wherein R^{38} is as defined hereinbefore in (9'));

11') C_{2-5}alkenylR^{38} (wherein R^{38} is as defined hereinbefore in (9'));

12') C_{2-5}alkynylR^{38} (wherein R^{38} is as defined hereinbefore in (9'));

13') C_{1-5}alkylX^6R^{38} (wherein X^6 represents -O-, -S-, -SO-, $-SO_2-$, $-NR^{43}CO-$, $-CONR^{44}-$, $-SO_2NR^{45}-$, $-NR^{46}SO_2-$ or $-NR^{47}-$ (wherein R^{43}, R^{44}, R^{45}, R^{46} and R^{47} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{38} is as defined hereinbefore in (9'));

14') C_{2-5}alkenylX^7R^{38} (wherein X^7 represents -O-, -S-, -SO-, $-SO_2-$, $-NR^{48}CO-$, $-CONR^{49}-$, $-SO_2NR^{50}-$, $-NR^{51}SO_2-$ or $-NR^{52}-$ (wherein R^{48}, R^{49}, R^{50}, R^{51} and R^{52}

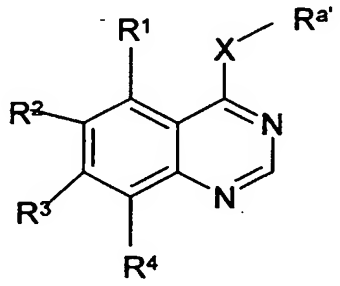
each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{38} is as defined hereinbefore in (9'));

15') C_{2-5}alkynylX^8R^{38} (wherein X^8 represents -O-, -S-, -SO-, $-SO_2-$, $-NR^{53}CO-$, $-CONR^{54}-$, $-SO_2NR^{55}-$, $-NR^{56}SO_2-$ or $-NR^{57}-$ (wherein R^{53}, R^{54}, R^{55}, R^{56} and R^{57} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{38} is as defined hereinbefore in (9'));

16') C_{1-3}alkylX^9C_{1-3}alkylR^{38} (wherein X^9 represents -O-, -S-, -SO-, $-SO_2-$, $-NR^{58}CO-$, $-CONR^{59}-$, $-SO_2NR^{60}-$, $-NR^{61}SO_2-$ or $-NR^{62}-$ (wherein R^{58}, R^{59}, R^{60}, R^{61} and R^{62} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{38} is as defined hereinbefore in (9')); and

17') C_{1-3}alkylX^9C_{1-3}alkylR^{37} (wherein X^9 and R^{37} are as defined hereinbefore (in 5') in the preparation of a medicament for use in the inhibtion of aurora 2 kinase.

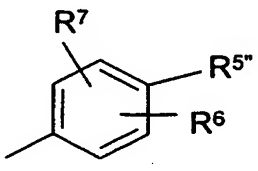
9. The use according to any one of claims 1 to 5 where the compound of formula (I) is a compound of formula (IV)



(IV)

or a salt, ester, amide or prodrug thereof;

where R^1, R^2, R^3, R^4 and X are as defined in claim 1 and $R^{a'}$ is a 3-quinoline group or a group of sub-formula (i)



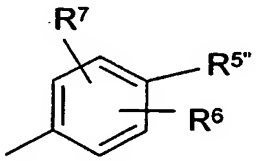
(i)

where R^6 and R^7 are as defined in relation to formula (I) and $R^{5''}$ is halogen or a group of formula $NR^{10}R^{10'}$ where R^{10} and $R^{10'}$ are as defined in claim 1.

10. The use according to claim 9 wherein the compound of formula (VI) is a compound of formula (IVA) which is of structure (IV) as shown above, or a salt, ester or amide thereof;

where X is O, or S, S(O) or $S(O)_2$, or NR^8 where R^8 is hydrogen or C_{1-6}alkyl;

$R^{a'}$ is a 3-quinoline group or a group of sub-formula (i)



(i)

where $R^{5"}$ is halogen or a group of formula $NR^{10}R^{10'}$ where R^{10} and $R^{10'}$ are selected from hydrogen or optionally substituted hydrocarbyl or R^{10} and $R^{10'}$ together with the nitrogen atom to which they are attached form a heterocyclic ring which may optionally contain further heteroatoms or an azo group of formula -N=N-R^{11} where R^{11} is an optionally substituted hydrocarbyl group or optionally substituted heterocyclic group;

R^6 and R^7 are independently selected from hydrogen, halo,C_{1-4}alkyl, C_{1-4} alkoxy, C_{1-4}alkoxymethyl, di(C_{1-4}alkoxy)methyl, C_{1-4}alkanoyl, trifluoromethyl, cyano, amino, C_{2-5}alkenyl, C_{2-5}alkynyl, a phenyl group, a benzyl group or a 5-6-membered heterocyclic group with 1-3 heteroatoms, selected independently from O, S and N, which heterocyclic group may be aromatic or non-aromatic and may be saturated (linked via a ring carbon or nitrogen atom) or unsaturated (linked via a ring carbon atom), and which phenyl, benzyl or heterocyclic group may bear on one or more ring carbon atoms up to 5 substituents selected from hydroxy, halogeno, C_{1-3}alkyl, C_{1-3}alkoxy, C_{1-3}alkanoyloxy, trifluoromethyl, cyano, amino, nitro, C_{2-4}alkanoyl, C_{1-4}alkanoylamino, C_{1-4}alkoxycarbonyl, C_{1-4}alkylsulphanyl, C_{1-4}alkylsulphinyl, C_{1-4}alkylsulphonyl, carbamoyl, N-C_{1-4}alkylcarbamoyl, N,N-di(C_{1-4}alkyl)carbamoyl, aminosulphonyl, N-C_{1-4}alkylaminosulphonyl, N,N-di(C_{1-4}alkyl)aminosulphonyl, C_{1-4}alkylsulphonylamino, and a saturated heterocyclic group selected from morpholino, thiomorpholino, pyrrolidinyl, piperazinyl, piperidinyl imidazolidinyl and pyrazolidinyl, which saturated heterocyclic group may bear 1 or 2

substituents selected from oxo, hydroxy, halogeno, C_{1-3}alkyl, C_{1-3}alkoxy, C_{1-3}alkanoyloxy, trifluoromethyl, cyano, amino, nitro and C_{1-4}alkoxycarbonyl, and

R^1, R^2, R^3, R^4 are independently selected from, halo, cyano, nitro, trifluoromethyl,

C_{1-3}alkyl, $-NR^{12}R^{13}$ (wherein R^{12} and R^{14}, which may be the same or different, each represents hydrogen or C_{1-3}alkyl), or $-X^1R^{14}$ (wherein X^1 represents a direct bond, -O-, $-CH_2-$, -OCO-, carbonyl, -S-, -SO-, $-SO_2-$, $-NR^{15}CO-$, $-CONR^{16}-$, $-SO_2NR^{17}-$, $-NR^{18}SO_2-$ or $-NR^{19}-$ (wherein R^{15}, R^{16}, R^{17}, R^{18} and R^{19} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl), and R^{14} is selected from one of the following groups:

1') hydrogen or C_{1-5}alkyl which may be unsubstituted or which may be substituted with one or more groups selected from hydroxy, fluoro or amino,

2') C_{1-5}alkylX^2COR^{20} (wherein X^2 represents -O- or $-NR^{21}-$ (in which R^{20} represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{21} represents C_{1-3}alkyl, $-NR^{22}R^{23}$ or $-OR^{24}$ (wherein R^{22}, R^{23} and R^{24} which may be the same or different each represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl);

3') C_{1-5}alkylX^3R^{25} (wherein X^3 represents -O-, -S-, -SO-, $-SO_2-$, -OCO-, $-NR^{26}CO-$, $-CONR^{27}-$, $-SO_2NR^{28}-$, $-NR^{29}SO_2-$ or $-NR^{30}-$ (wherein R^{26}, R^{27}, R^{28}, R^{29} and R^{30} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{25} represents hydrogen, C_{1-3}alkyl, cyclopentyl, cyclohexyl or a 5-6-membered saturated heterocyclic group with 1-2 heteroatoms, selected independently from O, S and N, which C_{1-3}alkyl group may bear 1 or 2 substituents selected from oxo, hydroxy, halogeno and C_{1-4}alkoxy and which cyclic group may bear 1 or 2 substituents selected from oxo, hydroxy, halogeno, C_{1-4}alkyl, C_{1-4}hydroxyalkyl and C_{1-4}alkoxy);

4') C_{1-5}alkylX^4C_{1-5}alkylX^5R^{31} (wherein X^4 and X^5 which may be the same or different are each -O-, -S-, -SO-, $-SO_2-$, $-NR^{32}CO-$, $-CONR^{33}-$, $-SO_2NR^{34}-$, $-NR^{35}SO_2-$ or $-NR^{36}-$ (wherein R^{32}, R^{33}, R^{34}, R^{35} and R^{36} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{31} represents hydrogen or C_{1-3}alkyl);

5') R^{37} (wherein R^{37} is a 5-6-membered saturated heterocyclic group (linked via carbon or nitrogen) with 1-2 heteroatoms, selected independently from O, S and N, which heterocyclic group may bear 1 or 2 substituents selected from oxo, hydroxy, halogeno, C_{1-4}alkyl, C_{1-4}hydroxyalkyl, C_{1-4}alkoxy, C_{1-4}alkoxyC_{1-4}alkyl and C_{1-4}alkylsulphonylC_{1-4}alkyl);

6') C_{1-5}alkylR^{37} (wherein R^{37} is as defined hereinbefore in (5'));

7') C_{2-5}alkenylR^{37} (wherein R^{37} is as defined hereinbefore in (5'));

8') C_{2-5}alkynylR^{37} (wherein R^{37} is as defined hereinbefore in (5'));

9') R^{38} (wherein R^{38} represents a pyridone group, a phenyl group or a 5-6-membered aromatic heterocyclic group (linked via carbon or nitrogen) with 1-3 heteroatoms selected from O, N and S, which pyridone, phenyl or aromatic heterocyclic group may carry up to 5 substituents on an available carbon atom selected from hydroxy, halogeno, amino, C_{1-4}alkyl, C_{1-4}alkoxy, C_{1-4}hydroxyalkyl, C_{1-4}aminoalkyl, C_{1-4}alkylamino, C_{1-4}hydroxyalkoxy, carboxy, trifluoromethyl, cyano, -$CONR^{39}R^{40}$ and -$NR^{41}COR^{42}$ (wherein R^{39}, R^{40}, R^{41} and R^{42}, which may be the same or different, each represents hydrogen, C_{1-4}alkyl or C_{1-3}alkoxyC_{2-3}alkyl);

10') C_{1-5}alkylR^{38} (wherein R^{38} is as defined hereinbefore in (9'));

11') C_{2-5}alkenylR^{38} (wherein R^{38} is as defined hereinbefore in (9'));

12') C_{2-5}alkynylR^{38} (wherein R^{38} is as defined hereinbefore in (9'));

13') C_{1-5}alkylX^6R^{38} (wherein X^6 represents -O-, -S-, -SO-, -SO_2-, -$NR^{43}CO$-, -$CONR^{44}$-, -SO_2NR^{45}-, -$NR^{46}SO_2$- or -NR^{47}- (wherein R^{43}, R^{44}, R^{45}, R^{46} and R^{47} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{38} is as defined hereinbefore in (9'));

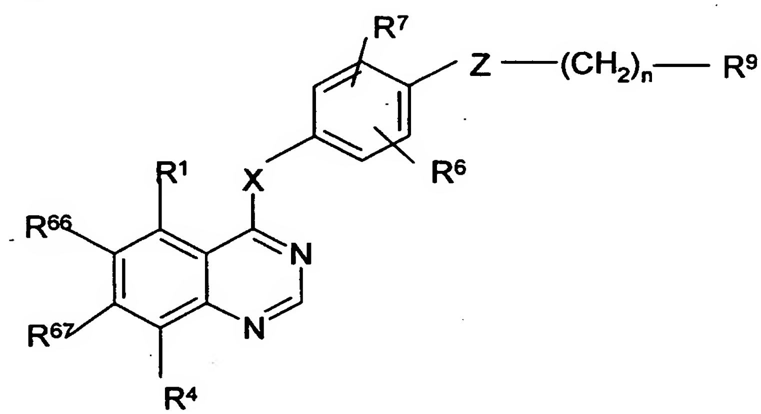
14') C_{2-5}alkenylX^7R^{38} (wherein X^7 represents -O-, -S-, -SO-, -SO_2-, -$NR^{48}CO$-, -$CONR^{49}$-, -SO_2NR^{50}-, -$NR^{51}SO_2$- or -NR^{52}- (wherein R^{48}, R^{49}, R^{50}, R^{51} and R^{52} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{38} is as defined hereinbefore in (9'));

15') C_{2-5}alkynylX^8R^{38} (wherein X^8 represents -O-, -S-, -SO-, -SO_2-, -$NR^{53}CO$-, -$CONR^{54}$-, -SO_2NR^{55}-, -$NR^{56}SO_2$- or -NR^{57}- (wherein R^{53}, R^{54}, R^{55}, R^{56} and R^{57} each independently represents hydrogen, C_{1-3}alkyl or C_{1-3}alkoxyC_{2-3}alkyl) and R^{38} is as defined hereinbefore in (9'));

16') $C_{1-3}alkylX^9C_{1-3}alkylR^{38}$ (wherein X^9 represents -O-, -S-, -SO-, $-SO_2-$, $-NR^{58}CO-$, $-CONR^{59}-$, $-SO_2NR^{60}-$, $-NR^{61}SO_2-$ or $-NR^{62}-$ (wherein R^{58}, R^{59}, R^{60}, R^{61} and R^{62} each independently represents hydrogen, $C_{1-3}alkyl$ or $C_{1-3}alkoxyC_{2-3}alkyl$) and R^{38} is as defined hereinbefore in (9')); and

17') $C_{1-3}alkylX^9C_{1-3}alkylR^{37}$ (wherein X^9 and R^{37} are as defined hereinbefore (in 5').

11. A compound of formula (IIB)



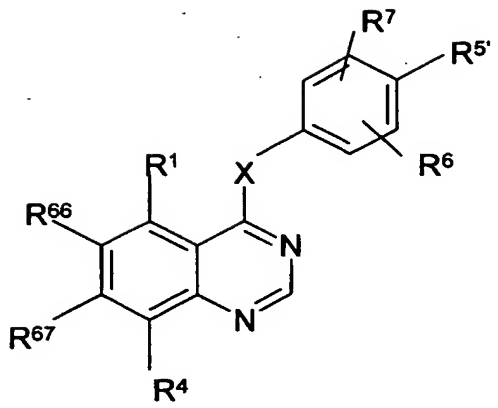
(IIB)

or a salt, ester, amide or prodrug thereof

where X, Z, R^9, R^6 and R^7 and n are as defined in claim 1 and R^{66} is halo, cyano, nitro, trifluoromethyl, $C_{1-3}alkyl$, $-NR^{12}R^{13}$ (wherein R^{12} and R^{13}, which may be the same or different, each represents hydrogen or $C_{1-3}alkyl$), or a group $-X^1R^{14}$ where X^1 and R^{14} are as defined in claim 1 ;

and R^{67} is $C_{1-6}alkoxy$ optionally subsitituted by fluorine or a group X^1R^{38} in which X^1 and R^{38} are as defined in claim 1; provided that at least one of R^{66} and R^{67} is other than unsubtituted methoxy; or

a compound of formula (IIIB)

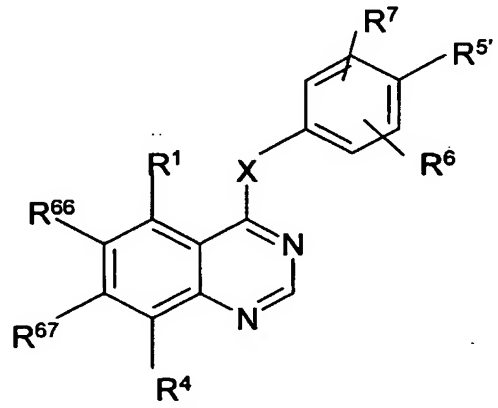


(IIIB)

or a salt, ester, amide or prodrug thereof,

where X, R^4, R^1, R^6 and R^7 are as defined in claim 1and R^{66} are R^{67} are as defined above and $R^{5'}$ is as defined in claim 7: or

a compound of formula (IVB)

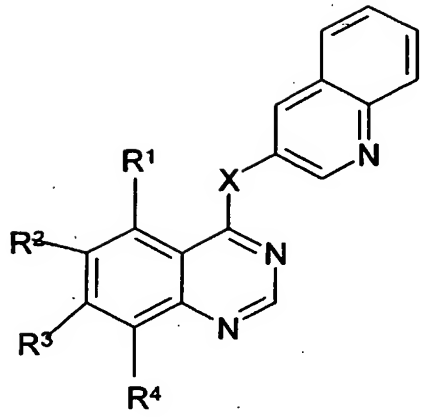


(IVB)

or a salt, ester, amide or prodrug thereof,

where X, R^1, R^4, R^6 and R^7 and n are as defined in claim 1, $R^{5''}$ is as defined in claim 9 and R^{66} are R^{67} are as defined above; or

a compound of formula (IVC)

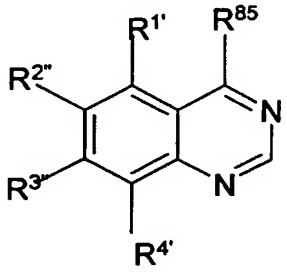


(IVC)

or a salt, ester, amide or prodrug thereof,

where R^1, R^2, R^3, R^4 and X are as defined in claim 1.

12. A method of preparing a compound according to claim 11 which comprises reacting a compound of formula (VII)



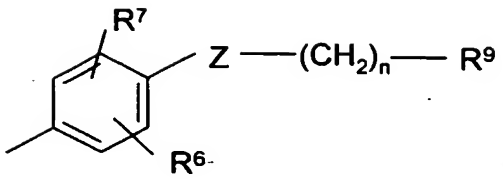
(VII)

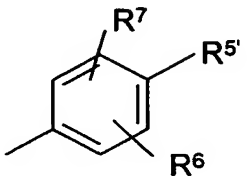
where $R^{1'}$, $R^{2''}$, $R^{3''}$, and $R^{4'}$ are respectively equivalent to a group R^1, R^{66}, R^{67} and R^4 as defined in claim 11 or a precursor thereof, and R^{85} is a leaving group, with a compound of formula (VIII)

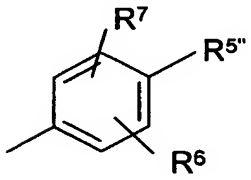
$$H\text{-}X\text{-}R^{a''}$$

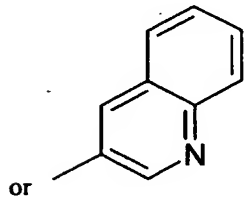
(VIII)

where X, is as defined in claim 1, and $R^{a''}$ is selected from









where Z, n, R^6, R^7 and R^9 are as defined in claim 1, $R^{5'}$ is as defined in claim 7 and $R^{5''}$ is as defined in claim 9;

and thereafter if desired or necessary converting a group $R^{1'}$, $R^{2''}$, $R^{3''}$ or $R^{4'}$ to a group R^1, R^2, R^3 and R^4 respectively or to a different such group.

13. A method for inhibiting aurora 2 kinase in a warm blooded animal, such as man, in need of such treatment, which comprises administering to said animal an effective amount of a compound of formula (I) as defined in claim 1, or a salt, ester, amide or prodrug thereof.

14. A compound of formula (IIB), (IIIB), (IVB) or (IVC) as defined in claim 11, or or a salt, ester, amide or prodrug thereof, for use in a method of treatment of the human or animal body by therapy.

15. A pharmaceutical composition comprising a compound of formula (IIB), (IIIB), (IVB) or (IVC) as defined in claim 11, or a salt, ester, amide or prodrug thereof, in combination with at pharmaceutically acceptable carrier.